

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Muddy Creek

Water Body Segment at a Glance:

Counties:	Grundy and Mercer
Nearby Cities:	Trenton
Length of impaired segment:	36.5 miles
Pollutant:	Unknown
Source:	None given
Water Body ID:	0557



State map showing location of watershed

Scheduled for TMDL development: Approved by U.S. EPA October 20, 2010

Description of the Problem

Beneficial uses of Muddy Creek¹

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation
- Secondary Contact Recreation

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

Because Muddy Creek has been listed as impaired for unknown pollutants, no identifiable numeric criteria apply. However, all Missouri Streams are protected by the general criteria contained in Missouri's Water Quality Standards at 10 CSR 20-7.31(3). The particular criteria that apply to Muddy Creek state:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

¹ According to Missouri's revised water quality standards, 10 CSR 20-7.031 Table H, effective October 2009.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

Background information and water quality data

Muddy Creek is one of ten streams initially listed on Missouri's 2002 303(d) List as being impaired by unknown pollutants. The U.S. Environmental Protection Agency (EPA) based these initial listings on the department's revised "Monitoring Report on 26 Waters" and visual/benthic low flow surveys. Specific reasons cited for listing this stream included observations of reduced biological diversity, the presence of prostrate and filamentous algae, and the presence of rocks darkened by manganese (indicating a daily oxygen sag). Evidence of impairment was primarily narrative and no numeric data were collected to support the listing.

A biological assessment and habitat study was conducted in 2006 and 2007 by the Missouri Department of Natural Resources to provide a more thorough assessment of whether or not the macroinvertebrate community of Muddy Creek is impaired, and to define the habitat and water quality characteristics of the Creek. This study revealed no overall water quality impairments and failed to indicate impairment of the macroinvertebrate community (see table below). However, the study did find "significant physical alterations to the stream", as well as some evidence of elevated nutrients. The study concluded that the macroinvertebrate evaluation may not give a full assessment of the overall quality of the stream.

Muddy Creek is currently on the 2008 303(d) List as impaired by unknown pollutants. In order to address stream conditions described in the visual/benthic survey and the bioassessment, a TMDL has been developed that targets load reductions of nutrients and sediment. The Muddy Creek TMDL was approved by EPA on October 20, 2010.

Stream Condition Index Scores for Muddy Creek, Mercer and Grundy Counties

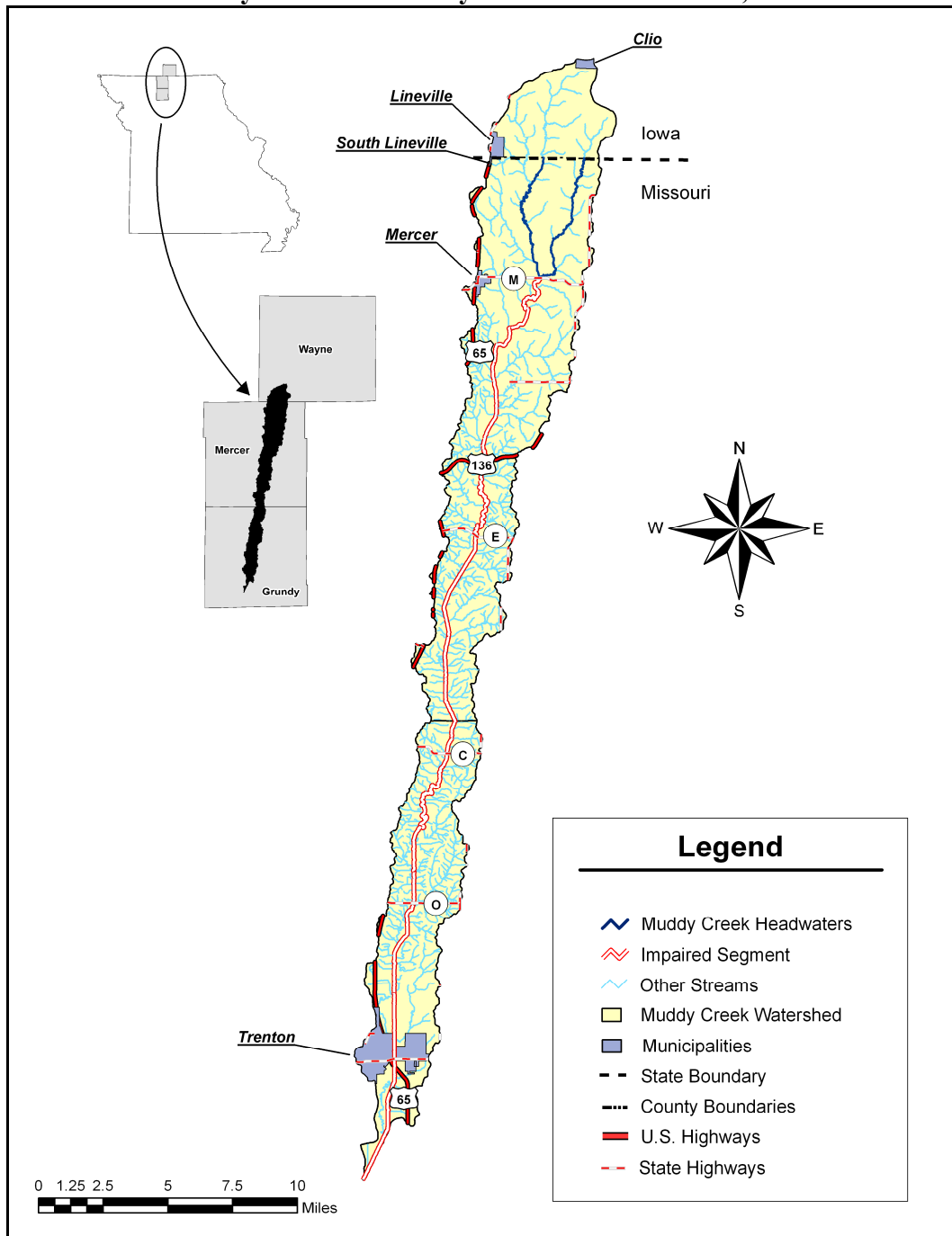
Scores above 16 indicate no macroinvertebrate impairment

Site	Date	Score
Muddy Cr. - 1	Fall 2006	18
Muddy Cr. - 2	Fall 2006	18
Muddy Cr. - 3	Fall 2006	20
Muddy Cr. - 4	Fall 2006	20
Muddy Cr. - 5	Fall 2006	20
Muddy Cr. - 1	Spring 2007	ND
Muddy Cr. - 2	Spring 2007	16
Muddy Cr. - 3	Spring 2007	14
Muddy Cr. - 4	Spring 2007	18
Muddy Cr. - 5	Spring 2007	18

ND = No Data

See the map on the following page showing the impaired segment of Muddy Creek.

Muddy Creek in Grundy and Mercer Counties, Mo.



For more information call or write:

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